

LIST OF LAND SHELLS INHABITING RURUTU, ONE OF THE AUSTRAL ISLANDS, WITH REMARKS ON THEIR SYNONYMY, GEOGRAPHICAL RANGE, AND DESCRIPTIONS OF NEW SPECIES.

BY ANDREW GARRETT.

The small island of Rurutu = Oheatora of Capt. Cook, lies in south lat. $22^{\circ} 34'$, and west lon. $150^{\circ} 13'$, which is about 320 miles S. S. W. from Tahiti. As near as I can ascertain it is about eight miles in length, and has an elevation of about 1500 feet, over 100 feet of which consists of ancient coral reefs, which have been upheaved to that altitude.

Mr. Hugh Cuming was the first who visited the island for the purpose of collecting shells, and discovered two or three new species. The next experienced collector, Mr. Charles De Gage, who resides there, gathered a number of land shells, which he kindly forwarded to me for identification, and which form the subject of this paper.

Microcystis subtilis, Anton.

Helix subtilis, Anton, Verz. p. 35; Pfeiffer, Mon. Hel. vol. II. p. 33;

Reeve. Conch. Icon. pl. 111, fig. 626.

Helix vitrinella, Pfeiffer, Symb. vol. II. p. 41.

Helicopsis vitrinella, Beck, Ind. p. 20.

Nanina (Microcystis) subtilis, Albert, p. 60.

Oheatora = Rurutu (Cuming).

This species was not found by De Gage.

Microcystis punctifera, sp. nov.

Shell small, imperforate, orbicular, depressed, thin, smooth, shining, transparent, light-brownish horn color, dotted with white; spire convex; suture linear; whorls $4\frac{1}{2}$, depressly convex, radiately striate beneath the suture, moderately and regularly increasing; the last not descending in front, rounded on the periphery; base indented; aperture sub-vertical, orbicular lunate, wider than deep; peristome straight, simple, margins remote; columella slightly thickened with callus.

Height 3, major diameter $4\frac{1}{2}$ mill.

It is smaller, and darker colored than *subtilis*, which latter is pale horn color, and six mill. in diameter. It is more like *M. brunnea* collected by Cuming at Pitcairn's Island, which is about the same color, with white dots, but like *subtilis* is six mill. in diameter.

Patula Rurutuensis, sp. nov.

Shell umbilicate, discoid, thin, translucent, yellowish-horn color, the spire tessellated, and the last whorl with radiating flexuous fuscous stripes; radiately ribbed with small thin flexuous costæ, and deussated with microscopical raised lines; spire depressly convex; suture sub-canalicate; whorls 5, convex, narrow, slightly turgid near the suture; slowly and regularly increasing, the last not descending in front, sub-angular on the periphery; umbilicus deep, about one-fourth the major diameter of the shell; aperture somewhat oblique, depressly lunate; parietal region with a small revolving lamina on the upper third of the wall; peristome acute, straight, with remote margins.

Major diameter $3\frac{1}{2}$, height 2 mill.

The fine spiral striæ, thin ribs, single parietal lamina, and depressed sub-angular body whorl are its most prominent characters, and will readily distinguish it from any of the south Polynesian species.

Pitys De Gagei, sp. nov.

Shell umbilicate, sub-discoid, thin, translucent, corneous or luteous, horn color, spire more or less distinctly tessellated with chestnut-brown, and the last whorl radiately strigate with the same hue, the stripes sometimes flexuous, and the base either unicolor or adorned with stripes; sculpture consisting of fine, closely-set, radiating, slightly arcuate, thin, costulate striæ, smaller and more crowded beneath; spire convex, apex planulate; suture canalicate; whorls 6, convex, narrow, swollen next the suture, slowly and regularly increasing, the last not deflected in front, slightly depressed, and somewhat tumid; base moderately convex, with a small but deep umbilicus; aperture slightly oblique, narrow, lunate; the palate with five, and the parietal wall with three revolving lamina; peristome acute, straight, margins remote.

Major diameter 3, height $1\frac{1}{2}$ mill.

Closely allied to *P. Maupiensis*, but may be distinguished by its coarser, rib like striæ, more oblique aperture, smaller umbilicus, and more depressed body whorl.

Partula hyalina, Broderip.

Partula hyalina, Broderip, Proc. Zool. Soc. 1832, p. 32.

Bulinus hyalinus, Sowerby, Conch. Ill. fig. 9.

Bulinus hyalinus, Pfeiffer, Mon. Hel. vol. II. p. 67.

Partulus hyalinus, Beck, Ind. p. 47.

Judging from the number sent this is an abundant species. A few years ago I received a large quantity from Tubuai, also one of the Austral group, and nearly 100 miles east of Rurutu. That group is, without doubt, its specific centre, or metropolis.

The most surprising feature in the geographical distribution of this species is its occurrence in three distinct groups of islands. It is found, though sparingly, in nearly every valley in Tahiti, which is over 300 miles from its metropolis. I also obtained it at Mangaia, one of the Cook's or Hervey Islands, 400 miles west of Rurutu.

Had it only been detected in one or two valleys in Tahiti, its introduction could have been attributed to human agency. But when we consider its wide diffusion we can only account for its presence either by a separate creation of the same species in three groups of islands, or speculate on its distribution in some remote period, when the three groups formed a single large island, or part of a continent.

After a careful comparison of many examples from the three groups of islands, I cannot detect the slightest variation. Shells from the same locality vary slightly in the length of the spire, in size and thickness.

It is a strictly arboreal species, and may be distinguished by its uniform white color, flat, and widely-expanded peristome, and gibbous columella lip.

Reeve's figure is too much elongated.

Stenogyra juncea, Gould.

Bulimus junceus, Gould, Proc. Bost. Soc. 1846, p. 191; Ex. Shells, p. 76, fig. 87—Pfeiffer, Mon. Hel. vol. II. p. 220.

Stenogyra upolensis, Mousson, Jour. d. Conch. 1865, p. 175.

Bulimus upolensis, Pfeiffer, Mon. Hel. vol. VI. p. 100.

This common species is very widely diffused through Polynesia. I have found it inhabiting all the groups north of the equator, and south at all the islands from the Marquesas and Paumotu to the Viti group, and, in all probability, it ranges further west.

They are found under loose stones, beneath decayed wood, and among dead leaves, and range from near the seashore to 2000 or more feet above sea-level. The animal is light yellow.

Vertigo pediculus, Shuttleworth.

Pupa pediculus, Shutt., Bern. Mitth. 1852, p. 296—Pfeiffer, Mon. Hel. vol. III. p. 557—Mousson (Var. *Samoensis*), Jour. de Conch. 1865, p. 175.

Vertigo pediculus, Pfeiffer, Vers. p. 177.

Pupa sphyradium (*Samoenis*), Paetal, Cat. Conch. Sam. p. 108.

Pupa nitens. Pease, Proc. Zool. Soc. 1860, p. 459—Pfeiffer, Mon. Hel. vol. VI. p. 329.

Pupa hyalina, Zelebor, Pfeiffer, Mon. Hel. vol. VI. p. 329.

?*Vertigo nacca*, Gould, Proc. Bost. Soc. 1862, p. 280.

The few specimens received differ none from Tahitian and Cook's Islands examples.

At the latter location I found them in vast numbers on stony ground in a grove near the seashore, but comparatively rare in the mountain ravines. It occurs in more or less abundance at all the Polynesian Islands, also at the Viti group, and perhaps extends further west.

I obtained Mr. Pease's type specimens of *nitens* at Ebon, a low coral island in the Caroline or Marshall group. When he described that species he was not aware that Mr. Shuttleworth had anticipated him in his *pediculus*, described from Tahitian and Marquesian examples.

It is evident from Mr. Pease's remarks on page 463, Proceedings of the Zoological Society for 1871, that he entertained doubts of the specific weight of his *nitens* and Gould's *nacca*.

Many years ago I collected a species of *Vertigo* near Hilo, Hawaii, where Dr. Gould's types were obtained, and as near as I can recollect they differed none from *pediculus*.

The description of *nacca* is so brief and unsatisfactory that I cannot decide with certainty, so have marked it doubtful.

The following is Gould's diagnosis:—

“*T. ovata*, *lucida*, *alabastrica*, *tennuissima*, *striata*; anfr. 4 + *ventricosus* apice obtuso; sutura profunda; apertura subcircularis dente palatali (interdum bifido) dente columellari, dente basali denteque labiali armata; peritremate valde reflexo; umbilico rimato.—Axis $\frac{1}{10}$, diam. $\frac{1}{12}$, poll” (Gould).

With respect to Zelebor's *hyalina*, which is elaborately described, I do not hesitate to add it to the synonymy of *pediculus*.

The variation of *pediculus* consists in the more or less oblong form, distinctness of striation, more or less turgid whorls, compression of the base, and size of the rimate umbilicus. The parietal lamina is usually double, though often single. or bifurcate, and like the columellar tooth is constant. The palate is usually furnished with three teeth, which may be considered the normal number, though they frequently vary, and may be altogether

absent. Sometimes they are duplicated, or double, and more rarely may be seen rudimentary or secondary denticles besides the normal number.

Tornatellina oblonga, Pease.

Tornatellina oblonga, Pease, Proc. Zool. Soc. 1864, p. 673—Pfeiffer, Mon. Hel. vol. VI. p. 264.

Tornatellina bacillaris, Mousson, Jour. de Conch. 1871, p. 16, pl. 3, fig. 5.

A common species, ranging from the Marquesas and Paumotu to the Samoa Islands, and perhaps extends further west to the Viti group.

Prof. Mousson gives an accurate description of *oblonga* under the name *bacillaris*, from Samoa examples collected by Dr. Graffe.

They are found among dead wood and leaves, and sometimes on the fronds of ferns. They range from near the seashore to 2000 or more feet above sea-level.

Mr. Pease's type specimens were collected at the Society Islands.

Tornatellina conica, Mousson.

Tornatellina conica, Mousson, Jour. de Conch. 1869, p. 342, pl. 14, fig. 8; l. c. 1870, p. 128; l. c. 1871 (Var. *impressa*), p. 16.

Cionella (Leptinaria) conica, Paetel, Cat. Conch. Sam. p. 106.

Tornatellina oblonga, Pease (Part), Proc. Zool. Soc. 1864, p. 673.

This species, which is not uncommon, ranges from the Marquesas to the Viti Islands, and was collected by Dr. Graffe on the low coral islands of Ellie's group in central Polynesia.

Mr. Pease received from me some of these shells intermixed with *oblonga*, and supposing the two to be identical he included them in his diagnosis of that species. Since then I have collected thousands of specimens of both species at the various groups; and have hundreds now before me of all ages, and do not hesitate to pronounce them quite distinct. The shell under consideration I refer to Mousson's *conica*. His variety *impressa* is not uncommon in S. E. Polynesia.

As compared with *oblonga*, it is lighter colored, more robust, the spire more tapering, body whorl larger, and frequently with a marked depression in the middle, which is sometimes slightly concave. The parietal lamina is larger, and the columella more tortuous.

Tornatellina Philippi Pfeiffer.

Tornatellina Philippi, Pfeiffer, Zeitsch. Malak. 1849, p. 93; Mon. Hel. vol. III. p. 524.

Pupa Philippi, Kuster, pl. 18, fig. 20, 21.

Leptinaria Philippi, Ad., Gen. Mon. p. 141.

Achatina Philippi (*Leptinaria*), Pfr., Vers. p. 170.

There were several examples of this species among Mr. De Gage's shells, which differed none from Tahitian specimens. It also occurs at the Cook's and Marquesas Islands, though not common at any of the above-mentioned locations.

It may be readily distinguished by its swollen whorls, globose body, large compressed parietal lamina, and somewhat tortuous columella, which in young examples is bicipitate.

Tornatellina simplex, Pease.

Tornatellina simplex, Pease, Proc. Zool. Soc. 1864, p. 673—Pfeiffer, Mon. Hel. vol. VI. p. 266.

Not uncommon at Rurutu, and we found it at the Marquesas, Society, and very abundant at the Cook's Islands.

It agrees precisely with Mr. Pease's description of *simplex*, except having one more whorl, and *all* have the usual, though smaller parietal lamina, which he must either have overlooked or omitted to mention. I collected his type specimens at Tahaa, one of the Society Islands, and am positive this is the shell I sent him. At least I do not know of any species without the parietal lamina. Moreover, this is the only umbilicated species he received from me.

Tornatellina nitida, Pease.

Tornatellina nitida, Pease, Proc. Zool. Soc. 1860, p. 439—Pfeiffer, Mon. Hel. vol. VI. p. 264.

This common species inhabits all the islands in southeastern Polynesia, and extends its range through the small islands in central Polynesia to the Caroline or Marshall's group, where I obtained Mr. Pease's type specimens.

His diagnosis not being very satisfactory, I subjoin the following description:—

Shell small, imperforate, oblong, or elongate-conic, thin, smooth, shining, transparent, brownish-horn color; spire more or less elongate-conic, with sub-planulate outlines, and obtuse apex; suture well defined, linear; whorls 5-6, strongly convex, slowly and regularly increasing, the last not descending in front, some-

times slightly flattened near the peristome; aperture oblique, oblong, in adults about a third the length of the shell; parietal region with a thin, prominent lamina, which runs nearly parallel with the suture; peristome straight, acute, with the margins remote; columella tortuous, the lower margin armed with a thin, acute, slightly oblique fold; the palate frequently with one or two spiral rows of small compressed denticles.

Length 3, major diameter $1\frac{1}{4}$ mill.

A thin transparent species, with a more tapering spire than *oblonga*, with the twisted columella of *conica*, but readily distinguished from either by the acute plication in the columella, which can only be distinctly seen when looking obliquely into the aperture. Owing to the transparency of the shell, the sutural line appears to be narrowly margined. The palatal denticles, though sometimes wanting, were overlooked by Mr. Pease.

It is worthy of remark that the above author in his list of Pautotus shells received from me, and published in the French Journal of Conchology for 1871, refers the S. E. Polynesia species to his *nitida*.

Tornatellina affinis, sp. nov.

Shell small, imperforate, ovate-conic, thin, smooth, shining, transparent, light brownish-horn color; spire oblong-conic, with planulate outlines; apex obtusely rounded; suture narrowly margined; whorls six, plano-convex, slowly and regularly increasing, the last not deflected in front, rather large; aperture oblique, irregularly abbreviate ovate, a little more than a third the length of the shell; parietal wall with a strongly compressed prominent lamina; peristome acute, straight, regularly curved, margins remote; columella tortuous, not plicate or dentate.

Length $2\frac{3}{4}$, major diameter $1\frac{1}{2}$ mill.

This species, which we have ventured to record as new, is shaped very much like *Philippii*, but the whorls of the spire are flattened, and the body is not so turgid as in that species. The columella has the peculiar twist of *conica*, but our shell is smoother, more shining, the spire more tapering, and the whorls much more depressed.

Tornatellina micans, sp. nov.

Shell small, imperforate, ovate-conic, transparent, thin, polished, faintly striate under the lens, pale brownish-horn color; spire sub-

acute, oblong-conic, sides planulate; suture distinctly and narrowly marginate; whorls six, sub-planulate, slowly and regularly increasing, the last rather large, not descending in front; aperture oblique, ovate-lunate, more than a third the length of the shell; parietal wall with a prominent, strongly-compressed lamina; peristome thin, simple, regularly curved; columella slightly twisted, depressed, armed with a sub-medial, nearly horizontal, acute tooth-like fold; palate with numerous irregularly disposed denticles.

Length $2\frac{1}{2}$, major diameter $1\frac{1}{2}$ mill.

The single example before me differs so much from any other species, that, after some hesitation, I have concluded to describe it as new.

It is shaped almost precisely like *affinis*, but has the palatal denticles, and acute, columellar, tooth-like plait of *nitida*.

Tornatellina perplexa, sp. nov.

Tornatellina bilamellata, Schmeltz (not Anton), Cat. Mus. Godeff. No. 5, p. 90.

Shell small, oblong-conic, imperforate, fragile, glossy, pellucid, smooth, pale brownish-horn color; spire oblong-conic, with sub-planulate outlines; apex obtusely rounded; suture distinctly linear; whorls six, convex, moderately and regularly increasing, the last convexly rounded, not deflected in front; aperture oblique, ovate-lunate, about one-third the length of the shell; peristome thin, straight, regularly curved; columella depressed, tortuous, bi-dentate, the basal tooth small, the upper, which is sub-medial, is large and prominent; parietal region with a large, prominent, curved lamina; palate garnished with more or less numerous irregularly disposed denticles.

Length $2\frac{3}{4}$, major diameter 1 mill.

Mr. De Gage sent a number of these shells of all ages, and I have myself collected the same species at the Cook's and Society Islands.

Its close resemblance to *nitida* has perplexed me so much that I have long hesitated about the propriety of separating the two as distinct.

It may, however, be distinguished from that species by its more dilated and bidentate columella. The upper tooth is also larger, and less acute than in *nitida*. Some examples have the palatal denticles mounted on delicate, longitudinal lines of callus. Others

have the internal teeth so distinct as to give the aperture a ringed appearance.

Cook's Island examples sent to the Museum Godeffroyannum were erroneously referred to Anton's *bilamellata*, a species twice the size of this.

Tornatellina serrata, Pease.

Lamellina serrata, Pease, Proc. Zool. Soc. 1860, p. 439.

Tornatellina serrata, Pfeiffer, Mon. Hel. vol. VI. p. 265.

Lamellina lævis, Pease, Proc. Zool. Soc. 1864, p. 672.

Tornatellina lævis, Pfeiffer, Mon. Hel. vol. VI. p. 266.

This species has the same extensive range through Polynesia as *nitida*. Many years ago I found the same, or a closely allied species on low bushes near the seashore at Gnam.

They, like nearly all the species, are usually found adhering to the under surface of loose stones, dead wood, among decayed leaves, and sometimes on the leaves of low bushes.

I obtained Mr. Pease's type examples of *serrata* at Ebon, in Micronesia; and his *lævis* at Hualine and Tahiti. Mr. Cuming, who received specimens of both species, considered them identical.

After a careful examination of a large number of all ages from the different groups of islands, I find the palatal lamina much more frequently serrated than smooth. They are, in fact, all smooth at certain periods of their growth.

The description of *serrata* is somewhat obscure; that of *lævis* is more accurate.

It cannot well be confounded with any other Polynesian species; its ovate-conic form, swollen whorls, deep suture, acute columellar tooth, and, more particularly, the remote longitudinal, prominent, smooth, or serrated palatal laminae will readily distinguish it from any other.

The last character induced Mr. Pease to establish his genus *Lamellina*. In his list of Polynesian land shells published in the Proceedings of the Zoological Society for 1871, he records only two species, his *serrata* and *lævis*, while he overlooked the same, but less conspicuous character in *Hidalgoi*, Crosse, inhabiting the Gambier Islands. The accurate figure of that species in the Journal de Conchyliologie for 1865, exhibits a small bidentate lamina. Specimens from the same locality, now before me, either possess the same feature, or have simply from one to two spiral rows of denticles in the palate.

Petit's *globosa*, from Rapa or Opara is described as having two obsolete plicæ in the palate. In *micans*, *perplexa*, and *nitida* we find short plicæ or denticles, and frequently rudimentary longitudinal lamina. Some specimens of *nitida* have the latter character as strongly developed as in *serrata*. Prof. Mousson has described a Viti species under the name of *columellaris*, which is either the same or very closely allied to *nitida*, and possesses denticles in the palate.

If the genus *Lamellina* is accepted, it should be modified so as to include all the species with either denticles, plicæ, or laminae in the palate, though the character on which the genus is based is not, in my opinion, of sufficient importance to rank as generic.

There are several other species described, from other parts of the world, which possess the same characters.

Succinea De Gagei, sp. nov.

Shell ovate, pale to dark-amber color, or ferruginous, thin, fragile, pellucid, scarcely shining, more or less rugose with lines of growth; spire moderately produced, sub-acute, less than a third the length of the shell; whorls 3-3½, convexly rounded, the last large, obliquely produced; aperture sub-vertical, large, regularly ovate, acute above, sides nearly equally curved, rounded below; columella thin, gently arched; peristome acute, regularly curved.

Length 11, major diameter 7 mill.

Mr. De Gage sent about 100 examples of all ages: it is the first species recorded from the Austral Islands.

It is closely allied to Gould's *pudorina*, a Tahitian species, but is smaller, less elongate, and the spire is less produced.

Melampus violus, Lesson.

Auricula viola, Lesson, Voy. Coquille, p. 342.

Melampus caffer, Var. *B.*, Pfeiffer, Mon. Auric. p. 40.

Melampus viola, Pfeiffer, Mon. Auric. p. 58.

Melampus caffer, Pease (not of Kuster), Jour. de Conch. 1871, p. 93—

Schmeltz, Cat. Mus. Godeff. n. 5, p. 88.

Melampus violus, Pease, Proc. Zool. Soc. 1871, p. 477.

The Rurutu shells received differ none from those I collected at the Paumotus and Society Islands.

From the above synonymy and references it will be seen that there is some confusion in respect to the interpretation of Lesson's species, which he obtained at Borabora, one of the Society Islands.

There are only five species of *Melampus* inhabiting that group,

and they are common to all the islands. Of these, *striata*, as far as known, has not been discovered elsewhere; while of the remaining four species, *luteus* and *fasciatus* are very widely diffused through Polynesia, Melanesia, and the Indian Seas. *M. Philippi* seems to be confined to southeastern Polynesia. All the above-mentioned four species are correctly determined. We now have only the species under consideration to identify.

In 1871, Mr. Pease published in the French Journal of Conchology a list of Anaa (Paumotu Isl.) land shells, collected by me in 1865, and recorded this species as *caffer*, Küst. Adopting his view I distributed the shells to my correspondents, under that name.

The same year he published his list of Polynesian land shells in the Proceedings of the Zoological Society, and excluded *caffer*, but recorded *violus* from Borabora.

Dr. Pfeiffer's *caffer*, var. β , which Mr. Cuming collected at Rurutu, is undoubtedly the same as our shell.

It is a very common species, and is confined to the Paumotu, Society, and the Austral Islands. Its limited range also proves its distinctness from *caffer*, which is recorded as a south African and Philippine species.

In shape, it resembles *fasciata*, and the last whorl is sub-angulate above. The spire is convexly conoid, mucronate, and nearly one-third the length of the shell; the upper whorls usually have a few faint radiating incised lines. The well-impressed suture is more or less lacerated by large wrinkles of growth on the last whorl. The base is sub-rimate, and sometimes decussated with a few faintly-defined impressed striae. Parietal region with two, sometimes three plicae on the basal half, and the brownish-violet columella has a rather small oblique fold. The inner margin of the peristome is always deep chestnut-brown, approaching black, and the palate has 4-6 bluish-white plicae.

Living shells are uniform fuscous; frequently the belly or front of the last whorl is brownish-yellow, with a transverse fuscous band just beneath the middle. Sometimes, though more frequently in immature examples, the ground-color is brownish-yellow, with the spire and upper portion of the last whorl, together with a sub-basal band, fuscous.

Length 12, major diameter 7 mill.

Melampus luteus, Quoy et Gaimard.

Auricula lutea, Q. et G., Voy. Astrol. vol. II. p. 163, pl. 13, fig. 25-27.

Melampus luteus, Pfeiffer, Mon. Auric. p. 36.

Conovulus luteus, Anton., Verz. p. 48.

This species is abundant at all the Polynesian Islands, except the Sandwich and Marquesas groups.

The only variation is in size, and depth of color; it is never banded. This, and the preceding species, are found just above high-water mark.

Omphalotropis curta, sp. nov.

Shell small, rimate, abbreviately ovate, solid, faintly striate, cinereous under a thin yellowish-olive epidermis; spire obtuse, short, convexly-conical, more or less decorticated; suture deeply impressed; whorls five, convex, the last very large, rounded, nearly half the length of the shell, the periphery with a stout rounded keel; basal carination large; aperture nearly vertical, roundly-ovate, whitish or reddish yellow; peristome rather thick, straight, and continuous.

Length 5, major diameter $3\frac{1}{2}$ mill.

Quite distinct from any other Polynesian species, and may be readily distinguished by its short stout shape, and large rounded keel.

Chondrella striata, Pease.

Chondrella striata, Pease, Proc. Zool. Soc. 1871, p. 477.

Hydrocena striata, Schmeltz, Cat. Mus. Godeff. No. 5, p. 100.

Mr. De Gage sent several examples of this species, which differed none from Cook's and Society Islands specimens.

They inhabit dry localities in forests, and are found adhering to rocks, dead wood, and the under surface of loose stones.

They vary slightly in size, height of spire, distinctness and size of the spiral, raised lines, which in some examples are obsolete. The color is usually reddish-brown, sometimes ruddy corneous, rarely pale yellow.

The genus *Chondrella* was established by Mr. Pease in 1871, the type of which is his *Cyclostoma parvum*. In his list of Polynesian land shells he records three species, his *parva*, *striata*, and *minutissima*, Sowb. The last inhabits Pitcairn Island. *Hydrocena insularis*, Crosse, from the Gambier Islands, which Mr. Pease referred to his sub-genus *Atropis*, is a *Chondrella*, closely allied to *parva*, or, more correctly, intermediate between the latter and

striata. *Cyclostoma exigua*, Homb., also from the Gambiers, probably belongs to the same genus.

Mr. Pease, in his description of the genus, remarks, from observations made by me that the animal was destitute of tentacles. Since the above was published, I have verified my former observations by a careful study of many examples of both *striata* and *parva*.

The animal is translucent, and, excepting the large conspicuous black eyes, is colorless in both species. The foot is small, oblong, rounded behind, and during locomotion is nearly or quite concealed by the shell, which is carried diagonally. The head, which is entirely destitute of tentacles, is produced into a short blunt muzzle, which sometimes assumes a slightly bi-lobed appearance. When creeping, only the extreme tip of the muzzle is seen from above, while the conspicuous eyes are plainly visible through the transparent shell.

***Helicina minuta*, Sowerby.**

Helicina minuta, Sowerby, Proc. Zool. Soc. 1842, p. 7; Thes. p. 13, pl. 1, fig. 40-41.

This small species is very abundant, and agrees in every respect with Tahiti and Moorea examples. It is not found on any of the other islands of the Society group, though several species inhabiting the other islands are usually confounded with *minuta*, one of which is described by Dr. Pfeiffer under that name.

Sowerby's type specimens were collected at Rurutu by Mr. Cuming. His diagnosis, though very brief, accords well with the shells before me. The size he gives is also precisely the same. The shell described by Pfeiffer, which is larger, is, as near as I can determine, one of Mr. Pease's unpublished species, which inhabits Raiatea.

***Assimineea nitida*, Pease.**

Hydrocena nitida, Pease, Proc. Zool. Soc. 1864, p. 674.

Hydrocena parvula, Mousson, Jour. de Conch. 1865, p. 184.

Assimineea nitida, Pease, Jour. de Conch. 1869, p. 165, pl. 8, fig. 11.

Assimineea lucida, Pease, Jour. de Conch. 1869, p. 166, pl. 8, fig. 10.

Omphalotropis parvula, Paetel, Cat. Conch. Sam. p. 124.

Hydrocena similis, Baird, Brenchly's Cruise of the Curacoa.

This small species ranges from the Marquesas and Paumotus to the Viti Islands.

They are found under dead wood, among decayed leaves, and range from near the seashore to about 2000 feet above sea-level.

The only variation is in size, more or less produced spire, and color, which varies from a light to dark corneous, rarely brownish, with faint indication of a band on the body whorl.

I obtained Mr. Pease's type specimens of *lucida* in beach sand at Anaa, one of the Panmotus Islands. They were worn, and discolored by salt water. Living shells, which I subsequently found at the same locality, differed none from *nitida*.